UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

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Insect Control
Coeur d'Alene

INSECT CONTROL REPORT

FALL

1932

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Wm. Evenden

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Insect Control
Coeur d'Alene
Fall 1932

Fall control was recommended by Mr. Evenden, of the Bureau of Entomology, on five different units which comprised an estimated area of 9420 acres, carrying an estimated total of 2873 infested trees, including the cull logs left on the Larson & Johnson sale of fire killed timber. Before starting this job it was agreed that burning should be the method employed in fall treatment and the necessary equipment, i.e., torches and oil, was placed on the ground for this purpose. The first camp was established on September 19 at Rock City, Larson & Johnson sale area. At this time conditions were such that burning could not be undertaken because of fire hazard. The logs on this particular job were decked and the camp moved to a new setting on upper Yellow Dog Creek before conditions were favorable for burning. Yellow Dog River Camp was established September 21, with Downey Creek and Flat Creek Camps going in September 26 and 28, respectively. A considerable number of trees were cut and decked before conditions were such as to permit burning to be safely done. In fact, the first logs were burned on October 12. Because of this fact the cost of treating was considerably higher than would have otherwise prevailed. From October 21 until the camps were brought out on November 1 conditions were most unfavorable because of incessant rains and on the higher slopes a considerable amount of snow had fallen, all of which retarded both spotting and treating to an appreciable degree. From October 11 to October 31, inclusive, the precipitation amounted to 3.69 inches.

On the fall project the spotting was accomplished by the use of 6 man crews, using one man as compassman, 4 men as spotters, and one man as chief spotter. The compassman ran the line, made drainage map of the area covered, and spotted on his field sheet the location of infested trees found. The chief spotter worked with the regular spotters directing their movements and endeavored to make the spotting as tight as possible. It is believed this method of spotting is an improvement over the old 5 man crew method. The check made on this work showed a higher percentage of trees spotted than was obtained in spotting under the 5 man crew method last spring.

The writer was in charge of the project, with Charles B. Mand, District Ranger in the Shoshone District, actually directing the work on the ground. The crews were built up from men experienced in this line of work, and a total of 97 men were employed. Practically every man on the job had worked on insect control during 1931 and the spring of 1932, and quite a few had been on the job since the days of Webb in the Big Hole country. Mr. Terrell of the Bureau of Entomology was on the job throughout the entire time, assisting very materially in spotting. He also personally directed the work of check spotting in its entirety, working a crew of 5 men for a total of 11 days, the cost of which has been included in the cost of spotting. 9.3 percent of the total area covered on the fall project was checked with the following results: Flat Creek 10 percent of area checked, Yellow Dog Creek 12 percent checked, Yellow Dog River 7.3 percent checked and Downey Creek 9 percent checked. Flat Creek showed that 83 percent of the trees were being spotted by the regular spotting crews, Yellow Dog Creek 96 percent, Yellow Dog River 87 percent and Downey Creek 75 percent. The large percentage of trees missed on Downey Creek is unexplainable. The two chief spotters employed here were men of wide experience and were very conscientious in their endeavor to secure the best results possible. Likewise, the camp manager, an ex-ranger, was a man of wide experience in insect control. Downey Creek had the lowest infestation of any area included in the fall project, averaging about one tree in each 5 acres. Past experience has shown that we ordinarily have greater difficulty in spotting on areas where the infestation is light than where a heavy infestation is found. The conclusions of Messrs. Terrell and Mand as well as the writer are: That topographic conditions, together with incessant rains and a considerable amount of snow late in October was an influencing factor in this particular case.

By referring to the summary of man day production it will be noted that the trees treated on the fall project averaged one tree to each 3.20 acres as against an average of one tree to each 4.50 acres for the Shoshone District last spring. In the spotting this fall the man day average was 2.99 trees as against 2.60 trees last spring. Treating averaged 1.70 trees per man day as against 2.84 trees last spring or an average of 1.14 trees less per man day. This difference in treating may be explained by the fact that approximately 60 percent of

the job had been covered and the logs decked before conditions were safe to burn. This made necessary a return to each individual deck of logs for the sole purpose of burning, and brought the cost up to a high level. Furthermore, it is much more difficult to fire logs which have been decked up for some time than to fire them as they are being piled together or immediately thereafter. Had conditions been favorable for burning at all times, this could have been accomplished with only a slight additional cost over and above the actual cost of decking.

An experiment was made in burning individual trees after felling by means of a high pressure torch. Two torches recommended and selected by Mr. Evenden, and burning distalate with a flash point of 160 were used. It was necessary to use 4 gallons of oil to each 14 foot length of log having a diameter of 15 inches. This experiment was undertaken with the idea of spraying the individual tree after it had been felled and leaving the oil to burn off the bark and down to the wood surface. However, after giving the experiment a thorough trial it was found that the oil after being sprayed on the log would merely burn off doing but little damage to the bark. Further experiment was made by actually applying the torch and holding it against the logs until the outer surface was completely charred. This, of course, proved to be prohibitive due to the amount of oil consumed and the time of the man in operating the torch. The writer is thoroughly convinced that treatment by this method is not feasible because of the prohibitive cost.

Although continued effort was made all along the line to keep costs to the lowest possible figure consistent with a good workmanlike job, the total cost per tree is in excess of the cost which was obtained in the spring control to the extent of about 17 percent. Kitchen costs also show an increase of approximately 16 percent per man day. This is due largely to a more liberal use of fresh meat, fresh fruit, and fresh vegetables.

The following summary shows the estimated acreage, estimated number of trees, the actual acreage covered, and number of trees treated.

Unit	Est. Acres	Acres Covered	Est. Trees	Trees Treated
Rock City (cull log)	400	400	162	162
Yellow Dog River	2140	2351	1102	1001
Yellow Dog Creek	1000	917	226	268
Downey Creek	3120	1888	505	403
Flat Creek	1920	1184	576	343
Yellow Dog N. Side	840	230	302	None
Totals	9420	6970	2873	2177

It will be noted that Downey Creek and Flat Creek areas show a considerable difference in the estimated acreage and acreage actually covered. At the time Mr. Evenden made the setup for fall control, according to Mr. Terrell who had conducted the survey, the figures used for these two areas were largely tentative and subject to revision if found necessary. On Downey Creek the difference was caused in part by eliminating the Douglas fir type encountered. Further reduction was also made when it was found that certain portions of the area were free from infestation, or so lightly infested that treatment was not warranted.

The infestation of Flat Creek was found to cover an area of 1184 acres or slightly less than two sections. Where any material reduction was made Mr. Terrell was consulted concerning the matter and concurred in the action taken. The Yellow Dog North Side containing an area of 640 acres was not treated, the crews having been snowed out before this could be accomplished. However, 230 acres carrying an infestation of 72 trees were spotted. In conference with Mr. Evenden it has been agreed to carry out the treating here in the spring by the same method as used this fall, i.e., decking and burning. Mr. Evenden pointed out the necessity for completing the entire project set up for treatment this fall in order that a complete entomological check may be obtained as to results accomplished by this method of treating.

Summary of Man Day Production

Unit	Acres	Spot.	Man Days	Trees per Day	Treat.	Man Days	Trees per Day	Acres per Tree	Camp Mgr.
Rock City°	400				162	92	1.76	2.47	Chapin
Yellow Dog Riv.	2551	1009	274	3.68	1001	577	1.73	2.34	Robertson
Yellow Dog Cr.	917	259	94	2.75	268	161	1.66	3.42	Faulkner Chapin
Downey Creek	1888	409	197	2.07	403	228	1.77	4.68	Rossman
Flat Creek	1184	343	111	3.09	343	224	1.53	3.45	Faulkner
Yellow Dog No.Side	230	72	24	3.00	None	None		3.19	Robertson
Totals	6970	2092	700	2.99	2177	1282	1.69	3.10°°	

° Rock City area was the unit on which cull logs only were

treated, no spotting being necessary. This timber consisted largely of trees which had been felled during the process of logging and which had no commercial value because of defect. It was necessary to saw these trees into log lengths in order to make it possible to deck them for burning. 1135 logs were treated in this manner. In the summary of man day production they have been converted to trees under the heading "Trees Treated", using a converting factor of 7 logs per tree. Incidentally the timber handled here averaged 6½ logs per M feet B.M.

°°This figure obtained by dividing total acreage (6740) covered in treating by total number trees (2177) treated.

Cost Report
Insect Control Project
Coeur d'Alene National Forest

Project - Coeur d'Alene.
Period of Work - September 19 to November 1, 1932.
Acres Spotted - 6970. Acres Treated - 6740.
Number Trees Spotted - 2092. Number Trees Treated 2177.

1. Total Expenditures by Appropriations

a.	Insect Control Appropriation	$13100.00	
b.	Other Funds (contributed)	351.78	
c.	Total		$13451.78

2. Classified Expenditures

a.	Salaries (none)		
b.	Wages, Temporary Labor	$ 8383.55	
c.	Travel & Transportation	1329.30	
d.	Subsistence Supplies	2303.18	
e.	Other Supplies & Equipment	625.96	
f.	Contributed Time	351.78	
g.	Total		12993.77
	Balance		$ 458.01

Just contributed time "salvage"?

AK.

3. Activity Costs

		Total	Per Tree
a.	Supervision°	$ 1110.37	$ .5100
b.	Travel	64.37	.0291
c.	Transportation	1921.91	.8828
d.	Equipment	625.96	.2875
e.	Camps	1190.49	.5468
f.	Spotting	2974.18	1.3661
g.	Treating	5106.49	2.3456
h.	Total	$12993.77	5.9679
i.	Subsistence & cookhouse labor (prorated)	$ 2981.68	
j.	Subsistence only $2303.18 - Meals Served 11239 -Cost per Meal		$.2049
k.	Cookhouse Labor 678.50 " " " " "		.0603
l.	Total $2981.68 " "		$.2652

° Includes total contributed time.

It will be noted that classified expenditures and activity costs balance. Ordinarily this is not the case. The equipment charge of $625.96, with the exception of the costs of a few items represented therein, represents the rental charge made by Central Purchase and the cost of equipment having an annual depreciation of 100 percent. The cost of equipment other than that just mentioned amounted to $90.00 and the entire amount has, therefore, been charged off in this report.

4. Output

Spotting.	Number trees per effective man day	2.99
	Number acres " " " "	9.95
Treating.	Number trees per effective man day	1.69
	Number acres " " " "	5.25

Total amount of line run in spotting 69700 chains. Figuring the number of men actually spotting in each crew the amount of line run per effective man day amounts to 119.55 chains.

Activity costs include the following:

Subsistence. Food supplies and cookhouse labor (no transportation) have been prorated against labor on the basis of number of days on each activity. Non effective time of men paid by

the month, which includes Sundays, Saturday half holidays, rainy days, etc., not carried as separate item but total monthly rate has been charged against the activity on which the employee was engaged. Activity costs include all contributed time.

a. Supervision. General overhead, warehouse man, camp manager, when not engaged in spotting or treating, and all clerical help contributed by members of the Coeur d'Alene Office.

b. Travel. Travel and expenses paid to and from the job and salaries of men in travel status.

c. Transportation. All expenses of pack string, shoeing, wages of packer, all truck hire including drivers. Also includes freight and express. In lieu of forage $1.00 per effective day for each horse used has been charged against this project. This figure is the amount which has been set up for this purpose and is based on the cost per effective day for carrying the stock during 1930-31.

d. Equipment. Includes rental charges by Central Purchase for equipment not purchased outright. Also the cost of all equipment purchased in connection with this project. The reason for including the total cost has been previously explained in this report.

e. Camps. Includes cost of setting up and breaking camps. Also bull cook and cost of cutting and skidding wood. No transportation.

f. Spotting. Cost of spotting, including chief spotter and check spotting.

g. Treating. Cost of treating, including crew foremen. Also includes the cost of experimental treating as previously mentioned.

Direct camp costs amounted to $862.47. 97 men were employed which gives a camp cost per man of $8.87. Prorating the cost of subsistence brings the total cost up to $1190.49, or a total cost per man of $13.22.

The following summary shows what has been accomplished since intensive control was undertaken in 1928 down to the present time.

Acres Surveyed:	Mst. No. Trees	Rec. for Treatment	No. Trees Treated	Total Cost from Allotted Funds	Timber Affected M
355810	53804	47038	41114	$232761.00	20556

The following figures are set forth as a matter of comparison of costs between the spring and fall projects, 1932.

	Spring	Fall
a. Supervision	$.5604	$.5100
b. Travel	.0650	.0291
c. Transportation	.6692	.8828
d. Equipment	.2649	.2875
e. Camps	.4348	.5468
f. Spotting	1.5997	1.5661
g. Treating	1.5176	2.3456
Total	$5.1116	$5.9679

Cost per Meal, including cookhouse labor:

$ .2287	$ .2652

Year	Project	Forest	Duration of Project	Trees Affected	Insect Responsible	Total Acreage Involved	Method of Treating	No. Trees Spotted	No. Trees Treated	Expenditure From Allotted Funds	Contributed Time	Total Cost of Project	Total Cost per Tree	% of Reduction	Man Days Used	Results
1929	Coeur d'Alene	Coeur d'Alene	4-30 to 6-17	W.Pine	Dendroctonus Monticolae	5620	Felling and Peeling	1314	1074	$ 7078	$ 950	$ 8028	$7.47		1383	Partial Success
1930	"	"	3-30 to 6-20	W.Pine	"	57800	Felling and Peeling	22227	22841	141557	1984	143541	6.28	-63	19864	"
1930	"	"	9-29 to 11-16	W.Pine	"	6430	Felling and Burning	2384	1848	13367	801	14168	7.66		2001	"
1931	"	"	4-7 to 6-20	W.Pine	"	32750	Felling and Peeling	5125	5268	32424	3463	35887	6.81	+33	5517	"
1932	"	"	4-30 to 6-26	W.Pine	"	40666	Felling and Peeling	7861	7906	38882	3035	41917	5.30	-17	8794	"
1932	"	"	9-19 to 11-1	W.Pine	"	6970	Felling and Burning	2092	2177	12642	351	12993	5.96		2799	"
Totals						150236		41003	41114	245950	10584	256534	6.24		40358	

Note: It will be noted elsewhere in this report that expenditures from allotted funds amounted to $232761.00. These figures have been taken from the annual reports since 1929 and do not include the total charge for equipment. In compiling this report I have shown by years the total disbursements as represented by the clerical records of the Coeur d'Alene Office, and which I believe are correct.

The percent of reduction is based on the acreage covered in the survey made annually and includes the total area covered. It, therefore, applies to the Forest as a whole and not to the project as set up for treatment. The survey made in 1929 covered 99540 acres with an estimated number of 25904 trees, of which 24689 trees were treated in 1930. The survey made late in the summer of 1930 and which covered 109270 acres showed an estimate of 9731 trees of which 5268 trees were treated in 1931. The surveys made in 1931-32 covered an area of 127420 and 127170 acres respectively. The estimated number of trees was 12786 for 1931 and 15009 for 1932. Of this number 10083 trees have been treated in 1932.

The Bureau of Entomology, in the survey and report of 1931 infestation, recommended treatment of 7477 trees on an area embracing 42350 acres. The work which was carried on during the spring of 1932 included 7906 trees which were treated on 40666 acres. On the fall project of this year an additional 2177 trees were treated on 6970 acres. There yet remains an estimate of 4252 trees which have been recommended for treatment in 1933.

Conclusions.

The 1932 survey is more encouraging than any survey made since intensive control was instituted. The infestation as shown by Mr. Terrell's report shows a decided decrease for the Forest as a whole. It is felt that completion of the 1933 spring project will reduce the infestation to a point where the need for further control will be no longer required.

The change this fall from 5 man crew to 6 man crew in our method of spotting has resulted in a very decided increase in efficiency in this line of work. Furthermore, we have heretofore set up as an average day's work not less than two miles of line for each spotting crew. Special study this fall disclosed the fact that this is not consistent with a good clean up. Crews, more often than otherwise, under this requirement strive for quantity rather than quality. This fact is further borne out by the increase in the percentage of total trees spotted this fall over the percentages of total trees spotted on previous projects and also by the decrease in amount of line per day per crew.

The map showing the total area covered in 1932 is being mailed under separate cover to the Regional Office.

December 28, 1932.

Howard Drake
Logging Engineer

Approved 1-3 1933

Chas. D. Simpson
Forest Supervisor